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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,287	08/29/2000	Ted Chongpi Lee	Chi-1-1-5-1	9817

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EXAMINER	
PRIETO, BEATRIZ	
ART UNIT	**PAPER NUMBER**
2142	5

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/650,287	Applicant(s) LEE ET AL.	
	Examiner B. Prieto	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7,10,13,14,17 and 19* is/are rejected.

7)☒ Claim(s) *2,8,11,15,18 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Amendment filed 12/16/03, claims 1-20 have been examined as hereby set forth.

2. Correction to noted lack of antecedent basis is acknowledged.

3. Claims 2, 8, 11, 15, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3-5 dependent are claim 2, claim 9 is dependent on claim 8, claim 12 is dependent on claim 11 and claim 16 is dependent on claim 15, thereby further limiting above-mentioned objected claims.

Claim Rejection 35 U.S.C. 102

4. Quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action may be found in previous office action.

5. Claims 1, 6, 7, 10, 13-14, 17 and 19 are rejected under 35 U.S.C. 102(e) as being by anticipated by DALEY et. al. (Daley) U.S. Patent No. 6,256,309.

Regarding claim 1, Daley teaches a system/method related to field of communication system, teaching a system/method comprising the steps of:

iteratively defining a circuit path between a source node and a destination node in a network (Daley: repeatedly defining routes from a source node to a destination node, each defining a route i.e. physical link or virtual path connection between a source and each destination node, see col 1/lines 49-col 2/line 7, defining path from streams of destination nodes, col 5/lines 9-23, defining a circuit path (e.g. SVC) see col 2/lines 44-56), the network comprising

a plurality of nodes (12-16 of Fig. 1) interconnected by links, where each link has associated with it a respective bandwidth utilization level (Daley, bandwidth available see col 2/lines 63-67, path routes having range of available bandwidth see col 3/line 45-55) and

where links having bandwidth utilization levels exceeding a threshold level are not used to define said circuit path (Daley: do not use route if exceeding see col 8/lines 45-56, pruning, i.e. excluding routes for

use see col 4/lines 50-65).

Regarding claim 6, wherein said iteratively defined circuit path is compared to said ideal circuit path by comparing the number of links within each respective circuit path (Daley: selection based on the shortest path route and minimum number of hops see col 7/lines 65-col 8/line 11).

Regarding claim 7, prior art further teaches

determining a shortest path between a source node and a destination node (Daley: shortest path determination computation see col 5/lines 16-34), said shortest path comprising a plurality of intervening nodes coupled by respective links (Daley, generate listing of available paths, see col 5/lines 16-34, calculated shortest path for a specified constraint see col 6/lines 6-16, constrains include number of hops to destination see column 6/lines 59-66);

determining whether a respective bandwidth utilization level for each link within said circuit path is below a threshold level (Daley: bandwidth thresholds see col 8/lines 27-50); and

adapting said circuit path to avoid using links having respective bandwidth utilization levels above said threshold level (Daley: pruning routes ("adapting"), i.e. pruning or excluding routes for use see col 4/lines 50-65, dropping links see col 2/lines 60-67)

Regarding claim 10, prior art further teaches:

selecting, according to a shortest path algorithm, at least one link within a circuit path between a starting node and a destination node within a network comprising a plurality of nodes (Daley: path selection SPT based or choosing an SPT from among a plurality, each SPT associated with a route from one node to another node(s) see col 6/lines 1-29, selection of better path see col 8/lines 57-58);

determining whether each selected link has associated with it a bandwidth utilization level exceeding a threshold level (Daley: col 8/lines 26-50, see Fig. 4, step 62);

rejecting each selected link having associated with it a bandwidth utilization level exceeding said threshold level (Daley: col 8/lines 50-58); and

repeating said steps of selecting and determining until a circuit path between said starting node and said destination node has been determined (Daley: Fig. 4, step 60, a path selection for another see col 8/lines 57-58, repeating for each SPT select and determine steps see col 9/lines 3-14).

Regarding claim 13, selecting, according to said shortest path algorithm, each link within a circuit path between an intervening node (i.e. the last node of a partially formed circuit path) and said destination

node (Daley: shortest path selection including number of hops see col 7/lines 65-col 8/line 8).

Regarding claim 14, this method claim contains limitation substantially the same as limitation discussed on the method claims 1, and 10, same rationale of rejection is applicable, further limitation include, selecting, according to a shortest path algorithm, an available link to a ("next") node within said circuit path (Daley: path selection SPT based or choosing an SPT from among a plurality, each SPT associated with a route from one node to another node(s) see col 6/lines 1-29, selection of better path see col 8/lines 57-58).

Regarding claim 17, this claim comprises the computer readable medium storing a software program that, when executed by a computer, causes the computer to perform the method discussed on claim 1, therefore same rationale of rejection is applicable.

Regarding claim 19, prior art teaches:

a network manager for determining a circuit path between a source node and a destination node within a network comprising a plurality of nodes (Daley: routing agent 18 implements process of Fig. 2 for determining routes and associated available links between a source and destination nodes see col 5/lines 49-col 6/line 4, determining all circuit path e.g. virtual path or physical link between nodes see col 1/lines 49-col 2/lines 7); and

a data base for storing a respective bandwidth utilization level for each of a plurality of links interconnecting said nodes (Daley: database 22, stores obtained circuit path, i.e. typology information and associated traffic metrics see col 5/lines 38-62, routing table contain bandwidth utilization thresholds or brackets associated with available routes between nodes see col 5/lines 16-27;

said network manager determining said circuit path by iteratively selecting appropriate next nodes according to a shortest path algorithm (Daley: determining said circuit path by repeatedly selecting appropriate route to a destination node ("next nodes") according to a shortest path algorithm, generate listing of available paths according to the shortest path algorithm see col 5/lines 16-34, calculated shortest path for a specified constraint see col 6/lines 6-16, constrains include number of hops to destination see column 6/lines 59-66 next nodes or intervening nodes);

determining whether a link communicating with said selected next node has associated with it a bandwidth utilization level exceeding a threshold level (Daley, routing selection determine bandwidth available meeting requirements see col 2/lines 63-67, path routes selection having range of available bandwidth see col 3/line 45-55, links having bandwidth utilization levels exceeding a threshold level are

not used to define said circuit path see col 8/lines 45-56, pruning, i.e. excluding routes for use see col 4/lines 50-65); and

selecting an alternative next node in the case of said link having associated with it a bandwidth utilization level exceeding said threshold level (Daley route selection must satisfy bandwidth requirements including selecting an alternative route that meet requirement col 5/lines 9-25, see route selection associated with bandwidth thresholds levels selection see col 8/lines 27-57 including select another route, alternative path selection see col 9/lines 3-16).

Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being by anticipated by Shaikh et. al., Efficient Precomputation of Quality-of-Service Routes, 1998.

Regarding claims 1 and 10, Shaikh teaches an algorithm for defining selectable paths between interconnected source-destination pairs in a network, wherein link metric such as available bandwidth are considered in determining that a path is feasible to satisfy a predetermined request bandwidth requirement, wherein paths are considered feasible and thereby selected, if found the have sufficient available bandwidth to satisfy said bandwidth requirement (pages 1-2), paths that do not have sufficient bandwidth are not selected and excluded as offending links paths, the shortest-path algorithm is used to locate all minimum cost routes to each destination via a computation (iteration) of a shortest-path graph, computing multiple path to multiple destinations (pages 2-8).

Response to arguments

6. Applicant argues that prior art Daley does not teach claim (1) limitation as recited, specifically, comparing bandwidth utilization of proposed links against predetermined bandwidth threshold levels to determined if proposed link will be used to fulfill a route request, because applicant's invention advantageously balances a total load among the links of a communication system and the Daley reference is incapable of performing at least this aspect of applicant's invention.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "comparing bandwidth utilization of proposed links against predetermined bandwidth threshold levels to determined if proposed link will be used to fulfill a route request, including balancing a total load among the links of a communication system") are not recited in the rejected claim(s). This is not a suggestion of any sort. Furthermore,

although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In this case, claim reads that links (i.e. circuit paths between a source-destination pair) having a bandwidth utilization level are not used as circuit path this bandwidth utilization level exceeds a threshold level. Daley teaches where links between nodes (source-destination) are associated with traffic metric parameters such as bandwidth, links (claimed "circuit paths") which do not meet a specific bandwidth requirement are not used, i.e. are dropped or pruned (see column 2, lines 57-67), bandwidth thresholds are used via a routing algorithm to set paths to all destinations that have at least a predetermined bandwidth threshold e.g.100 kbps bandwidth (see column 8, lines 27-32, 45-51).

7. Applicant argues prior art Daley does not teach, the iterative step for identifying paths meets a predetermined bandwidth threshold level requirement are repeated, as taught by applicant's specification and claimed by at least the applicant's claim 1.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that claim 2 reads that when the circuits path meeting a bandwidth threshold level are exceeding an ideal shortest path by a threshold value, this value is adjusted and the iterative step for identifying each SPT path that meets a predetermined bandwidth threshold level requirement are repeated (column 8, lines 45-58). Applicant's arguments have been fully considered but not found persuasive.

8. The following prior art made of record and not relied upon are considered pertinent to applicant's disclosure; pertinence is presented in accordance with MPEP§ 707.05. Copies of documents cited will be provided as set forth in MPEP§ 707.05(a):

U.S. Patent No. 5,233,604 (08-1993)

Ahmadi et. al. discloses determining link paths between inter-connected source-destination pair nodes in a network, wherein each link is associated with an available load ("bandwidth") level, links which meet a predetermined threshold requirement for transmission of data are selected as feasible paths, wherein all links that provided to satisfy a particular request are insured that selected links conform to requested QoS bandwidth parameter and do not exceed predetermine threshold (columns 4, lines 8-13, 46-64, column 5, lines 1-28, 45-column 6, line 67 and column 7, lines 10-60.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (703) 305-0750. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Jack B. Harvey can be reached on (703) 305-9705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to the Central Fax Office:

(703) 872-9306, for Official communications and entry;

Or Telephone:

(703) 306-5631 for TC 2100 Customer Service Office.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Fourth Floor (Receptionist), further ensuring that a receipt is provided stamped "TC 2100".

B. Prieto
TC 2100
Patent Examiner
April 9, 2004